

AMENDMENT UNDER 37 C.F.R. § 1.111
Application Serial No. 09/880,047
Attorney Docket No. Q64973

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A network system wherein an IP packet according to a service requested by a terminal is sent to one of a plurality of service providers through a plurality of IP networks ~~different from each other in protocol~~ that each utilize a different network layer protocol and the service is supplied to the terminal through the utilization of an IP packet transmitted from the service provider to the plurality of IP networks,

said network system comprising a packet exchange means, provided between the plurality of IP networks, ~~for said packet exchange converting the format of the~~ a format of an IP packet to be sent between via the plurality of IP networks, networks from a first network layer protocol to a second network layer protocol different from said first network layer protocol so as to match ~~the format~~ a format of an IP network ~~as a send destination~~ that is a send destination of the IP packet to be sent,

wherein connection between the user terminal and the plurality of service providers is unified.

2. (previously presented): The network system according to claim 1, wherein the plurality of IP networks include:

a first IP network, which the terminal accesses, and

a second IP network, which the service provider accesses.

3. (currently amended): The network system according to claim 2, wherein the first IP network ~~has~~includes a first server which stores service information of services provided by the service provider.

4. (currently amended): The network system according to claim 2, wherein the first IP network ~~has~~includes a second server which stores account information of the service which has been provided to the terminal.

5. (previously presented): The network system according to claim 3, wherein the first server stores the format of each of the IP networks and the address of the service provider.

6. (currently amended): The network system according to claim 1, wherein the packet exchange ~~means~~ measures the amount of data of the IP packet for which the ~~format~~ network layer protocol has been converted.

7. (previously presented): The network system according to claim 2, wherein the terminal is connected to the first IP network through an access gateway that authenticates the IP packet.

8. (currently amended): A network system comprising:

a user terminal to be utilized by a user;

a plurality of networks of service providers or online entrepreneurs which provide various services to the user, wherein connection between the user terminal and the plurality of service providers is unified;

an IP network which transmits packet data between the user terminal and the networks through a router according to an IP address; ~~and~~

one or more servers connected to the IP network,

said servers functioning to record information about the user, information about the plurality of service providers or online entrepreneurs, and information about services provided by the networks to the user, and based on the recorded information, to unitarily manage account information of the services provided to the user, and to perform alternative account billing from the service providers or online entrepreneurs to the user; and

a packet exchange connected to the IP network, said packet exchange converting packet data of the user terminal from a first network layer protocol to a second network layer protocol

of a destination network within the plurality of networks, and converting packet data from a source network within the networks from the second network layer protocol to the first network layer protocol of the user terminal,

wherein the first network layer protocol and the second network layer protocol are different.

9. (currently amended): The network system according to claim 8, ~~which further comprises a packet exchange connected to the IP network, said packet exchange for converting packet data from the user terminal to the protocol and format of a destination network within the networks, and to convert packet data from a source network within the networks to the protocol and format of the user terminal~~wherein the packet exchange converts a packet format of the first network layer protocol to match a packet format of the second network layer protocol.

10. (currently amended): The network system according to claim 9, wherein the packet exchange performs the conversion of the packet data using multi-protocol label switching protocol (MPLS) or IP within IP as a network layer protocol.

11. (previously presented): The network system according to claim 8, wherein the user terminal is a personal computer or a portable terminal, capable of processing packet data.

12. (currently amended): A network system comprising:

an IP network through which an IP packet is transmitted;

an access gateway connected to the IP network;

a user terminal which is installed on a user side and is connected to the access gateway;

one or more servers ~~which are~~ connected to the IP network ~~and function to~~ that record information about the user and a plurality of service providers or online entrepreneurs, and record information about services provided by the service providers or online entrepreneurs to the user, and based on the recorded information, ~~to said one or more servers~~ unitarily manage account information of the services provided to the user;

~~a packet exchange, connected to the IP network, for converting received packet data to a format and protocol of a network of a service provider or an online entrepreneur as a send destination, and sending the converted packet data to the send destination~~

a packet exchange connected to the IP network, said packet exchange converting packet data of the user terminal from a first network layer protocol to a second network layer protocol of a destination network, and converting packet data from a source network from the second network layer protocol to the first network layer protocol of the user terminal,

wherein the first network layer protocol and the second network layer protocol are different; and

a plurality of border gateways which connect the packet exchange to a plurality of networks of the service providers or online entrepreneurs.

13. (previously presented): The network system according to claim 12, wherein the user terminal is a personal computer or a portable terminal, capable of processing packet data, and

the access gateway is a remote access server.

14. (currently amended): The network system according to claim 13, wherein the portable terminal is a portable telephone ~~having an i-mode function~~ connected to the IP network.

15. (previously presented): The network system according to claim 12, wherein the user terminal and the packet exchange are each a router.

16. (original): The network system according to claim 12, wherein the packet exchange is an exchange router.

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17. (currently amended): The network system according to claim 12, 15 or 16, wherein the packet exchange converts the received packet to ~~the format and the~~ a format corresponding to a network layer protocol of the send destination through encapsulating the ~~format a format~~ of the original IP packet by multi-protocol label switching protocol (MPLS) or IP within IP as a network layer protocol.

18. (previously presented): The network system according to claim 17, wherein the original IP packet comprises an IP (internet protocol) header and payload data, the packet data encapsulated by MPLS comprises an MPLS label for path designation, an MPLS label for user ID, an IP header and payload data, and the packet data encapsulated by IP within IP comprises an IP header for encapsulation, an IP header and payload data.

19. (currently amended): A packet data transmission method wherein packet data transmission for receiving/sending services between a user terminal and a plurality of service providers or online entrepreneurs is carried out using a plurality of virtual private network (VPN) platforms corresponding to the service providers, said packet data transmission method comprising:

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recording, in one or more servers, information about one or more users that utilize the user terminal, and information about the service providers or online entrepreneurs;

upon receiving a request from the user for a service, and only when information about the packet data from the user terminal matches access conditions recorded in the servers, converting the packet data from the user to a protocol and format of a network of a service provider or an online entrepreneur as a send destination by a packet exchange, and sending the converted packet data to the send destination;

for packet data sent from the service providers or online entrepreneurs, converting the packet data from a network layer protocol utilized by a service provider or online entrepreneur that transmits the packet data to a network layer protocol utilized by the user terminal~~protocol~~ and format of a network on the user terminal side by the packet exchange, and sending the converted packet data to the user terminal; and

storing and managing account information about the services provided to the user and providing alternative account billing to the user by the servers,

wherein the network layer protocol utilized by the service provider or online entrepreneur is different from the network layer protocol utilized by the user terminal.

20. (currently amended): The packet data transmission method according to claim 19, wherein the conversion of packet data by the packet exchange is carried out using multi-protocol

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label switching protocol (MPLS) or IP within IP as a network layer protocol based on the VPN platform corresponding to the service provider receiving/sending the packet data.

21. (new): The network system according to claim 1, wherein the packet exchange performs the conversion of the packet data using multi-protocol label switching protocol (MPLS) or IP within IP as a network layer protocol.